

Claims:

What is claimed is:

1. A photocatalyst sheet characterized in that it is the photocatalyst sheet at least on the surface of which photocatalyst particles coated with apatite are fixed, and

its surface to be welded with the parts of said photocatalyst sheets mutually overlapped is made of a thermally adhesive material.

2. A photocatalyst sheet characterized in that it is the photocatalyst sheet made of photocatalyst particles coated with apatite, and a substrate on the surface of which are fixed said photocatalyst particles, and

its surface to be welded with the parts of said photocatalyst sheets mutually overlapped is made of a thermally adhesive material.

3. A photocatalyst sheet characterized in that it comprises:
a substrate; and

coated layers coated on one side or both sides of said substrate, and said coated layers are the photocatalyst-containing layers on which apatite-coated photocatalyst particles are fixed.

4. A photocatalyst sheet characterized in that it comprises:
a substrate;

a first coated layer coated on one side or both sides of said substrate; and

a second coated layer coated on said first coated layer, and said second coated layer is the photocatalyst-containing layer on which apatite-coated photocatalyst particles are fixed.

5. The photocatalyst sheet as set forth in claim 3 or 4, characterized in that the apatite-coated photocatalyst particles fixed in said photocatalyst containing layer have parts exposed from the surface of said photocatalyst containing layer.

6. The photocatalyst sheet as set forth in any one of claims 3 - 5, characterized in that said apatite-coated photocatalyst particles are the photocatalyst particles either a part of the surface of which is coated with apatite, or a whole surface of which is coated with porous apatite.

7. The photocatalyst sheet as set forth in claim 6, characterized in that the quantity of coating of apatite to be coated on said photocatalyst particles is such that the weight loss ratio of whole of said photocatalyst sheet is 10% or less in case that the ultraviolet light of intensity 18 mW/cm² is irradiated for one hour on the surface of said photocatalyst sheet.

8. The photocatalyst particle as set forth in claim 6 or 7, characterized in that said photocatalyst sheet is either or both of an ultraviolet light responsive type and a visible light responsive type.

9. The photocatalyst sheet as set forth in any one of claims 6 - 8, characterized in that said photocatalyst particle contains titanium oxide, and said apatite is either of apatite hydroxide, apatite carbonate, apatite fluoride, or apatite chloride, or the mixture thereof.

10. The photocatalyst sheet as set forth in any one claims 3 - 9, characterized in that said substrate is made of either of such natural fibers as kenaf or jute or others, such synthetic fibers as polyamide fiber, polyaramide fiber, polyester fiber, polyvinyl chloride fiber, polyvinylidene chloride fiber, acrylic fiber, polyvinyl alcohol fiber, polypropylene fiber, polyethylene fiber, and others, or such inorganic fibers as glass fiber, silica fiber, basalt fiber, and others.

11. The photocatalyst sheet as set forth in any one of claims 3 - 10, characterized in that said apatite-coated photocatalyst particles are fixed with the resin or rubber constituting said photocatalyst-containing layer.

12. The photocatalyst sheet as set forth in claim 11, characterized in that the ratio of said apatite-coated photocatalyst particles to said resin or rubber is 10 - 90 weight %.

13. The photocatalyst sheet as set forth in claim 11 or 12, characterized in that said resin is either of vinyl chloride, polyethylene, polypropylene, ethylene-vinyl acetate copolymer, polyurethane, fluorocarbon resin, and polystyrene resins, acrylonitrile-butadiene-styrene copolymer, polyamide, acrylic resin, polycarbonate, methylpentene resins, or the mixture of these thereof and said rubber is either of chloroprene, polyethylenesulfonate, natural, butadiene, styrene, butyl, nitrile, acrylic, urethane, silicone, fluorocarbon, or ethylenepropylene rubbers .

14. The photocatalyst sheet as set forth in claim 13, characterized in that said fluorocarbon resin is either of polytetrafluoroethylene (PTFE), tetrafluoroethylene-hexafluoropropylene copolymer (FEP), tetrafluoroethylene-perfluoroalkylvinylether copolymer (PFA), polyvinyl fluoride (PVF), or polyvinylidene fluoride (PVDF).

15. A method of welding photocatalyst sheets, characterized in that it is the method of welding the photocatalyst sheets as set forth in any one of claims 3 - 14, to hold together the surfaces to be welded, without removing said photocatalyst-containing layer, and to mutually weld said surfaces to be welded.

16. The method of welding photocatalyst sheets as set forth in claim 15, characterized in that it is the method of mutually welding the resin or rubber present on said surface to be welded by thermal adhesion.

17. The method of welding photocatalyst sheets as set forth in claim 16, characterized in that in said photocatalyst-containing layer, the ratio of apatite-coated photocatalyst particles to the resin or rubber fixing said apatite-coated photocatalyst particles is 10 - 60 weight %.

18. A method of manufacturing photocatalyst sheets comprising a substrate and a coated layer on one side or both sides of said substrate and an outermost layer of said coated layer being the photocatalyst-containing layer with apatite-coated photocatalyst particles fixed thereon, characterized in that said photocatalyst-containing layer is made of resin or rubber, and said photocatalyst-containing layer is formed by coating the dispersion containing said apatite-coated photocatalyst particles.

19. A method of manufacturing photocatalyst sheets comprising a substrate and a coated layer on one side or both sides of said substrate, and an outermost layer of said coated layer being the photocatalyst-containing layer with apatite-coated photocatalyst particles fixed thereon, characterized in that said photocatalyst-containing layer is made of resin or rubber, and said photocatalyst-containing layer is formed by making a sheet of resin or rubber containing said apatite-coated photocatalyst particles, and laminating said sheet of photocatalyst-containing layer on the outermost layer of said coated layer.

20. A method of manufacturing photocatalyst sheets as set forth in claim 18, characterized in that said dispersion comprises resin or rubber, the apatite-coated photocatalyst particles, and organic solvents, and in said photocatalyst-containing layer, the ratio of said apatite-coated photocatalyst particles to said resin or rubber to fix the apatite-coated photocatalyst particles is 10 - 90 weight%.

21. A method of manufacturing photocatalyst sheets as set forth in claim 18, characterized in that said dispersion comprises resin or rubber, the apatite-coated photocatalyst particles, and water, and in said photocatalyst-containing layer, the ratio of said apatite-coated photocatalyst particles to said resin or rubber to fix the apatite-coated photocatalyst particles is 10 - 90 weight%.